C Resolving non-performing loans: a role for securitisation and other financial structures?

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Large stocks of non-performing loans (NPLs) on euro area bank balance sheets continue to present risks to financial stability. Significant legal and administrative reforms have been undertaken over recent years in countries with high levels of NPLs to streamline insolvency proceedings and maximise NPL recovery values. Yet, the market continues to provide low NPL valuations that result in wide bid-ask spreads, thus impeding large-scale NPL sales. This special feature highlights the potential role and benefits of co-investment strategies (between the private sector and the state) for addressing NPLs. These co-investment strategies may reduce information asymmetries between buyers and sellers, thereby enabling transactions that might otherwise not occur, or facilitate sales at higher prices. Moreover, the proposed schemes are priced at market levels and may, therefore, be free of state aid.

Introduction

The challenge of resolving the large stocks of NPLs weighing on bank balance sheets is currently to the fore in European policy discussions. The scale of this challenge and the range of available resolution options have been well documented.[154] Progress to date in addressing the stock of NPLs remains limited, however. By end-2016, 107 significant institutions held around €866 billion of gross impaired assets, compared with €942 billion at end-2015.[155] There is evidence, however, of tangible improvements in NPL coverage (see, for example, **Chart 3.13** in Section 3 of this Review) and of sustained, and in some cases increased, volumes of NPL transactions in some of the high-NPL jurisdictions (see **Charts C.1** and **C.2**). While the latter trend is expected to continue, supported by positive supply-side developments, the pace of disposal may prove insufficient to rapidly run down the large stocks.

The recent publication of the ECB's guidance to banks on non-performing loans should provide an important supply-side impetus.[156] Banks with high levels of NPLs are expected to define ambitious and realistic NPL strategies, which can include internal workouts, external servicing and outright portfolio sales, and should be accompanied by quantitative NPL reduction targets and credible operational plans. This should lead to higher NPL portfolio sales, increased provisioning and, as a result, a potential narrowing of bid-ask spreads in the secondary market.

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[154] See, for example, Grodzicki, M., Laliotis, D., Leber, M., Martin, R., O'Brien, E. and Zboromirski, P., "Resolving the legacy of non-performing exposures in euro area banks", *Financial Stability Review*, ECB, May 2015.
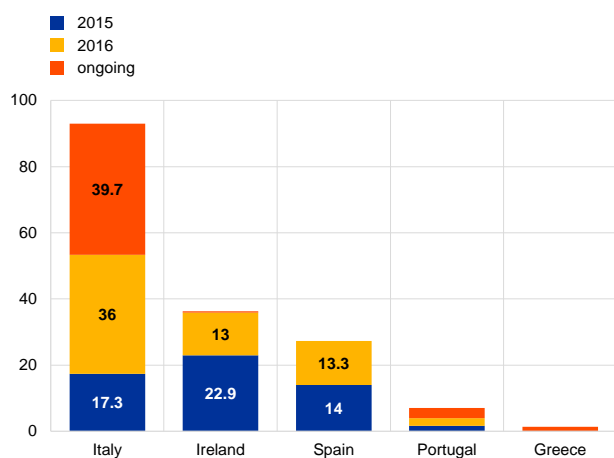
[155] ECB supervisory data.

[156] See "Guidance to banks on non-performing loans", ECB Banking Supervision, March 2017.

Demand-side impediments to the functioning of secondary markets for NPLs, such as poor-quality data, inefficient and costly recovery processes and judicial capacity constraints, remain a factor in many markets. A number of reforms regarding administrative procedures, insolvency and civil laws aimed at maximising NPL recoveries through both in- and out-of-court procedures have been introduced in the past few years in a number of jurisdictions to address these structural inefficiencies. Nevertheless, available evidence suggests that the market has not yet priced-in the effect of reforms, due to concerns regarding the efficiency of their actual implementation and/or because of a highly conservative approach to NPL valuation. This suggests that some degree of market failure may be playing a role in the persistence of large bid-ask spreads between the prices banks seek for their NPLs and the prices investors are prepared to pay for them. Fell et al. (2016) highlighted that externalities deriving from informational asymmetries may be a key factor in explaining these wide bid-ask spreads in euro area markets for NPLs, and that structural inefficiencies make a substantial contribution to lowering net present values, driving a further wedge between bid and ask prices.[157]

Chart C.1

Increasing activity in some high-NPL jurisdictions
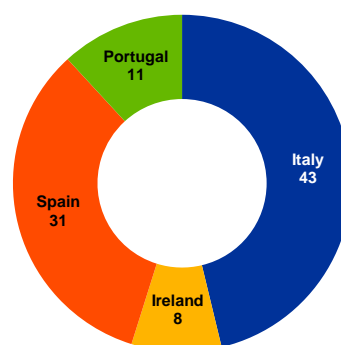
Size of deals completed and ongoing

(gross book values, € billions)

Chart C.2

Significant NPL activity took place in 2016

Number of completed NPL transactions in 2016

Source: Deloitte, "Deloitte Deleveraging Europe 2016-2017".
Notes: 2015 and 2016 data refer to completed transactions, while ongoing data refer to transactions reported to be in the pipeline. Some transactions may also include non-core asset disposals. Not all transactions result in balance sheet derecognition and completed transactions do not necessarily imply balance sheet derecognition in the same year.

Source: Deloitte, "Deloitte Deleveraging Europe 2016-2017".

A comprehensive range of policy options may have to be pursued to tackle large stocks of NPLs and to address the attendant market failures. Fell et al. (2016) noted the need for a comprehensive, multi-pronged approach. Constâncio (2017) went further, calling for national asset management companies (AMCs), clearing houses for NPLs and securitisation schemes, noting that securitisation could "complement outright NPL sales", expand "the universe of distressed debt investors"

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[157] See Fell, J., Grodzicki, M., Martin, R. and O'Brien, E., "Addressing market failures in the resolution of non-performing loans in the euro area", *Financial Stability Review*, ECB, November 2016.

and allow governments to "jump-start the NPL market, for example by co-investing, together with private investors, in junior or mezzanine tranches".[158, 159] In terms of securitisation, the innovative Garanzia Cartolarizzazione Sofferenze (GACS) scheme in Italy is highly welcome, yet remains largely untested.

Securitisation and other financial structures, with an element of public support provided in accordance with state-aid rules, could be highly beneficial in galvanising sales of NPLs and increasing the prices investors are prepared to pay for them. This special feature argues that such benefits derive from co-investments in which the state is exposed, fully or partially, to the same or similar risks as those taken on by private investors. Some of these instruments are, to some extent, analogous to asset protection schemes, which have been variously deployed in the past. Establishing such instruments would require some consideration of their optimal implementation since they would have to be applied in coordination with other supports as part of a comprehensive NPL resolution strategy. Moreover, to maximise their effectiveness, the instruments, which can be seen as tools to kick-start secondary markets and the concomitant reform agenda, should be based on a fixed and pre-announced fiscal envelope, as well as a clear timetable that mandates a limited window of availability. They must also be supported by robust legislation and conditions of use and their application should be also informed by macroprudential considerations regarding the holistic effects of the pursued measures. Following an elaboration of the rationale for co-investment instruments, two co-investment structures, based on securitisation and direct sale, are put forward. The special feature concludes with policy recommendations.

A rationale for co-investment

For the various stakeholders with an interest in resolving large stocks of NPLs, common objectives and aligned incentives are required to make meaningful progress.[160, 161] In framing policy responses, clear objectives, and the extent to which incentives can be aligned, must be considered. Key amongst these

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[158] See Constâncio, V., "Resolving Europe's NPL burden: challenges and benefits", keynote speech at "Tackling Europe's non-performing loans crisis: restructuring debt, reviving growth", Brussels, 3 February 2017.

[159] Public AMCs have been employed in a number of European jurisdictions over the last decade (for example, NAMA, established in Ireland in 2009; Sareb, established in Spain in 2012; and BAMC, established in Slovenia in 2013). However, the hurdles to setting up publicly funded AMCs have increased due to changes in the regulatory framework. Moreover, while AMCs have a role in resolving the currently high stocks of NPLs, they are best suited to managing certain asset classes, such as commercial real estate, land and related exposures such as development loans.

[160] While a discussion of the appropriate or optimal objectives that may be considered in resolving NPLs is beyond the scope of this special feature, such objectives may include, for example, the maximisation of net present values of NPLs or the collateral underlying them over a given time frame.

[161] Banks are incentivised to address large stocks of NPLs as they have very high costs of carry, absorb high levels of capital, impose high administrative and management costs, and may increase banks' cost of capital. For the state, resolving NPLs will serve to strengthen the banking sector, may make more credit available to productive borrowers in an economy, may address overindebtedness among households and firms, and may lead to better macro-financial outcomes over time. Incentives for debtors and potential investors may be considered to be of secondary importance, but are nevertheless important: investors should be incentivised to actively participate in the secondary market, to bring in specialist expertise, and to bear risk, whereas debtors should be incentivised to cooperate with banks and investors, as debt restructuring may return them to financial sustainability.

considerations is the extent to which structural inefficiencies and frictions are recognised as important demand-side impediments with a view towards appropriate policy responses. These inefficiencies and frictions can have an impact on NPL valuations by impeding NPL workout and result in uncertainties concerning time to enforcement, access to collateral and recovery values. Banks and potential investors have little control over these factors, but the state does. Indeed, while a bank or private investor can only maximise its return on investment through NPL servicing, the state can undertake legislative measures which can have very consequential effects on the asset values, and ultimately, the targeted rate of return in any deal.

Anecdotal evidence highlights the importance of state actions in tackling high rates of NPLs. In Spain and Ireland, for example, two countries which endured well-known and rapid rises in loan delinquencies, significant progress has been achieved in running down the resultant large stocks of NPLs. Both countries enacted a wide-ranging series of multi-disciplinary reforms to address structural inefficiencies, in the context of comprehensive programmes to address banking sector vulnerabilities, including high levels of NPLs.[162] These examples highlight the potential for virtuous cycles to be put in place, whereby a strong commitment to a broad-based reform agenda, followed by demonstrated implementation, can lead to market-based solutions which complement publicly supported schemes.

Even when structural reforms are enacted, however, these actions are not necessarily priced-in by investors in their decision-making. Typically, structural reforms take time to implement and so investors may be uncertain over whether states will actively pursue the announced policies and are determined to implement them accordingly. They may therefore want to see evidence that reforms are having the desired impact on the time and cost of recovery, recovery rates, etc..

Appropriately structured co-investment instruments where the state co-invests, at market conditions, with NPL investors may incentivise states to implement necessary structural reforms and, through this explicit signalling effect, may also partially address wide bid-ask spreads. Such instruments may enable NPL transactions to take place which otherwise may not have been completed and have the potential to increase the price that investors are willing to pay for NPLs. Moreover, co-investment structures are particularly effective in the context of securitisation, considering the significant advantages that securitisation has over direct sale as an NPL resolution tool.[163]

The time to recovery and the recovery rate are two key factors affecting NPL valuations. Consider the following stylised example, which highlights the potential

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[162] In both cases, it could be argued that the circumstances benefited from the broader context of EU-funded assistance programmes. While those programmes were important as a signal of intent with regard to delivering structural reform, such commitments were not necessarily programme-dependent.

[163] By tranching funding across different risk categories, securitisation generally achieves a lower average cost of funding. For example, an NPL portfolio purchased solely by a high internal rate of return (IRR) investor would likely result in a lower NPL price than in the case of a securitisation, where an investor in search of high returns has the possibility of acquiring the junior tranche only, while other investors, with lower risk tolerance, acquire the more senior tranches. Moreover, due to the possibility of utilising the NPL seller as a primary servicer, it allows for the decoupling of funding from NPL management, where so desired.

for reforms to improve asset values. **Chart C.3** illustrates the impact on asset prices in two scenarios where legislative and administrative reforms result in higher recovery rates, accelerated cash flow, or both.[164] Several key insights can be drawn. First, the level of investors' internal rate of return (IRR) requirements has a sizeable impact on price: in this example, an investor with an IRR requirement of 10% would be willing to pay 18 cents per euro of nominal value, but only 12.5 cents for a 25% IRR requirement. Second, increases in estimated recovery rates have a significantly positive impact on prices. In **Chart C.3**, a 5 percentage point increase in the recovery rate – from 25% to 30% – leads to a 20% increase in price. Third, accelerated cash flows – for example due to more efficient court or out-of-court proceedings – have a greater impact for high-IRR investors, as cash flows realised later are more heavily discounted. In this example, an acceleration of cash flows by two years leads to a 30% increase in the price paid by an investor with a 25% IRR target, compared with a 13% increase in the case of an investor seeking a 10% IRR. Hence, policy actions that *both* promote higher recovery rates and shorten workout processes are likely to be particularly beneficial.

Chart C.3

NPL price sensitivity to the discount rate, the recovery rate and the cash-flow horizon

(NPL prices in each scenario assume a certain cash-flow profile distribution, a 10% to 25% range of discount rates, and a given recovery rate)
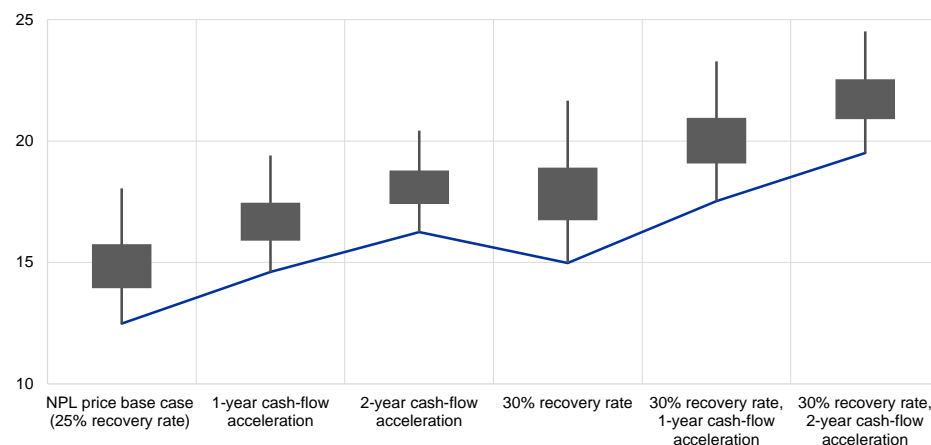
Source: ECB calculations.
Notes: The calculations assume a NPL portfolio with a notional value of 100 and a recovery rate of 25% in the base case. It is assumed that 60% of cash flows are recovered in the first three years, 80% by the fifth year and the rest, on an equal basis, by the tenth year. The NPL prices in each scenario are computed for IRRs of 10% (highest price), 15%, 20% and 25% (lowest price).

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[164] Higher recovery rates could be achieved via judicial reforms that increase transparency in the procedures related to repossessions, pre-insolvency and insolvency proceedings, measures that increase transparency concerning auctions of collateral, measures that lower transaction costs for properties purchased under foreclosure or insolvency proceedings, as well as creditor-friendly measures that encourage out-of-court restructuring in a value-maximising manner. Faster cash flow could be achieved via measures that shorten the in-court judicial process and related administrative insolvency procedures and timelines, allow for out-of-court debt restructuring and allow faster enforcement of collateral. As such, the revenues generated from the resolution of NPLs can be improved, while at the same time the costs of that resolution, in terms of fees, etc., can be reduced.

Co-investment tools to bridge the wide bid-ask spread

Amongst a range of co-investment-based tools that could be employed to complement the current NPL resolution toolkit, this special feature puts forward two options. The first is a guarantee on junior tranches of NPL securitisations, which is outlined in detail in Box A; the second bridges the bid-ask spread in NPL transactions by providing partial financing of the purchase price, outlined in Box B.

The junior guarantee on securitisation (JGS) is a guarantee offered bilaterally on the equity tranche in a true-sale NPL securitisation. It is structured as a total return swap, where the state guarantees up to 50% of the losses on the junior tranche, in return for any upside due to actual recoveries above initial estimations.[165] As such, the JGS is essentially a synthetic investment in the junior tranches of a securitisation, exposing the guarantor – the state – to the same risk/return profile as a private investor. The JGS offers a number of advantages to investors: it closely aligns the interests of investors and the state; it offers investors the possibility of an enhanced risk/return profile due to the state's direct exposure to the same risks and to the state's vested interest in avoiding losses; and it can be offered in a flexible manner, i.e. investors in the junior tranche can choose their own level of protection, if any. Finally and crucially, the JGS opens the way to increasing the number and types of investors in the junior tranche, by allowing the possibility of partially de-risking the tranche.[166] The JGS also offers important advantages from the state's perspective: it requires no upfront investment; it provides a strong signalling effect that the state is determined to carry through reforms that result in NPL value maximisation; and it is priced at market levels.[167] Overall, the use of the JGS may increase the price paid for the junior tranche and ultimately the price paid to the NPL seller.

The JGS may successfully mitigate market failure issues arising from a "market for lemons" situation in the NPL market, and therefore lead to increased transaction volumes. Such a market failure arises when insufficient NPL transactions occur due to buyers' concerns that NPLs being made available for sale are portrayed as having better credit quality than is the case (e.g. that they are in fact loans with no or very low recovery prospects, or "lemons"). The lack of sufficiently high quality data on historical NPL performance and on the portfolios offered for sale may, in some cases, contribute to difficulties in distinguishing between "good" and

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[165] In simple terms, a total return swap allows an investor to be exposed to the expected return and risk of an underlying asset as if it had purchased the asset.

[166] In particular, the JGS could play a catalyst role in widening the investor base in the junior NPL securitisation tranches. The JGS de-risks junior tranches, making them potentially attractive to new classes of investors, with lower risk tolerance and lower return requirements than traditional junior tranche investors, i.e. entities pursuing high-risk and high expected return investments. To widen the investor base in this way, support services would have to be made available in the market, to assist in pricing, structuring and servicing such transactions.

[167] Both the JGS and the FPS (forward purchase scheme) are priced at market levels, which is a key element for the smooth implementation of the tools. This also opens up the possibility of using them free of state aid. Nevertheless, such an assessment would need to be undertaken by the European Commission. From an implementation perspective, the tools would benefit from an ex-ante agreed framework that automatically ensures their applicability under the Bank Recovery and Resolution Directive and state-aid rules.

"bad" NPLs, and consequently to overly conservative valuations.[168] Akerlof showed that the solution to the "market for lemons" is for sellers of "good" assets to offer a performance guarantee.[169] In the case of NPLs and the JGS, while such a guarantee is offered by the state, instead of the NPL seller, it achieves the same result. Indeed, the JGS helps mitigate the risk to the buyer that the NPL portfolio underlying the securitisation is composed of "lemons". At the same time, the market pricing of the JGS, and the fact that the tranche investor remains exposed to the performance of the underlying NPL portfolio for at least half of the junior tranche amount, ensure that moral hazard, and the risk to the state, remain contained. As such, the JGS structure has the potential to balance the need to address a market failure while avoiding the risk of creating moral hazard through the state's intervention.
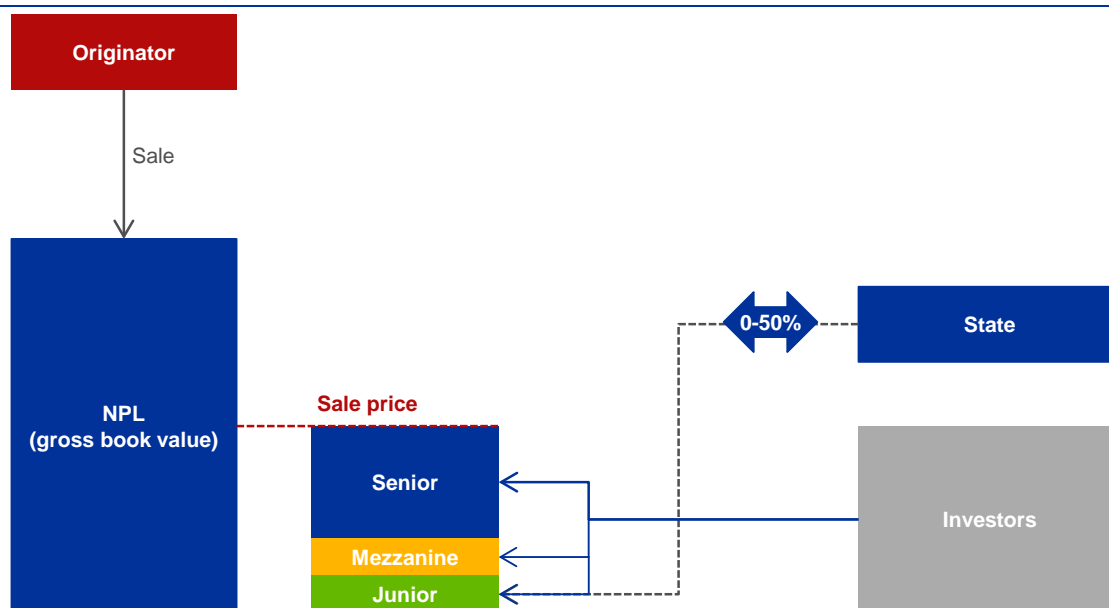
Box A

NPL junior guarantee on securitisation

The junior guarantee on securitisation (JGS) is a state guarantee on the equity tranche of a true-sale securitisation structure. **Chart A** and **Table A** illustrate its main structural features.

Chart A

Junior guarantee on securitisation

Source: ECB.

The guarantee, which is available separately from the structure, offers flexible protection, with investors deciding on the amount, up to a maximum of 50%, of the tranche to be guaranteed. The effect of the JGS is akin to a synthetic investment in the equity tranche, where the state is exposed

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[168] The presence of asymmetric information, where the NPL sellers have more information than NPL buyers and are incentivised to trade in "lemons", could lead to a bad equilibrium in the market, as "bad" assets tend to also drive out the "good" ones; see, for example, Fell et al. (2016), op. cit.

[169] See, for example, Akerlof, G., "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism", *Quarterly Journal of Economics*, Vol. 84(3), 1970, pp. 488-500.

to the same risk/return profile as the investor in the equity tranche, and where the investor finances the state's investment in return for compensatory payments for the costs and risks incurred.

Table A

Junior guarantee on securitisation – example of market-based structural features

Guarantee features	Description of features
Protected share	0%-50% of the junior tranche, with the percentage of protection chosen by the private investor
Minimum private investor purchase	Private investors need to purchase at least 50% of the junior tranche, or 25% where the originator retains part of the junior tranche
Guarantee availability	Separate from the securitisation, available separately and bilaterally to junior investors. The guarantee-related payments are not part of the securitisation cash flow
Guarantee format	Structured as a total return swap (TRS). The guarantee provider receives the total return under the TRS terms
Protected amount	The protected share of the equity tranche principal purchased by an investor. Where the price paid for the equity tranche is lower than its notional amount, the protected amount is computed with reference to the equity tranche price. If recoveries are lower than the protected amount, the guarantee is triggered in an amount proportional to the protected share
Payments under the guarantee	The guarantor receives the cash flows on the equity tranche, in an amount proportional to the protected share, available since the previous payment date. The guarantor pays the investor funding costs and compensation for the guarantor's own credit risk, applied to the protected share of the outstanding amount of the investor's equity investment at the payment date
Nature of pricing	Market-based
Waterfall restrictions	No restrictions
Guarantee enforcement	At the shorter of the maturity of the junior notes and the finalisation of portfolio workout (including sale)
Guarantee flexibility	Flexible; each investor can choose a guarantee share that matches its risk/return objectives
Accounting deconsolidation and SRT requirements	The originator bank must achieve both accounting deconsolidation and pass the significant risk transfer (SRT) test
Securitisation/tranche rating	Not required, as the guarantee fee is determined directly from the realised return on the equity tranche

The pricing of the JGS reflects that the guarantor is de facto a co-investor with the private sector investor(s), and is exposed to the same credit risk, in a synthetic manner. As such, the JGS is priced as a total return swap (TRS).[170] The guarantee provider (total return receiver) reimburses the investor (payer under the TRS), on a pro-rata basis determined by the protected share, for losses due to recoveries below the protected amount of the tranche, while it receives the upside, i.e. pro-rata recoveries above the protected amount of the equity tranche. Given that the equity investor makes the actual investment in the equity tranche, it receives compensation under the TRS on a pro-rata basis for its cost of funding and for its counterparty credit risk vis-à-vis the guarantor.

The structure of the JGS provides incentives for senior and junior investors to invest in the securitisation. No rating is required, given that the pricing of the guarantee is not rating dependent. The share of the guarantee provided under the JGS can be tailored to the individual needs of the investors. Junior investors can optimise their targeted risk/reward profile by choosing the appropriate level of protection. The return to investors is inversely proportional to the share of the guarantee required on the invested tranche. **Chart B** illustrates a case where there are four

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[170] A total return swap is an agreement to exchange the total return on a reference asset for a floating rate index, usually EURIBOR or LIBOR, plus a spread. The total return includes coupons, interest, and any gain or loss on the reference asset over the life of the swap. In a TRS, the total return payer pays the total return on the asset (i.e. is compensated in case of losses and pays gains), while the total return receiver receives the total return on the asset (pays losses or receives gains). TRS are usually used as a financing tool. The TRS payer finances an asset on behalf of the TRS receiver and is compensated for asset funding costs and for the risk that the TRS receiver may default on its swap obligations, for the duration of the transaction.

different investors in the equity tranche, each of them having a different preference for the level of protection needed. **Chart C** illustrates the return to an investor in the case where the yield on the equity tranche required by investors is 20%. If investors require a guarantee for half of their investment, i.e. the maximum guarantee share, the expected yield to investors also decreases to about half (in the current environment, compensatory funding costs and credit spreads for sovereign risk received by investors are very low in comparison to the returns required by them and, therefore, the investors' net expected return is close to a pro-rata expected yield), reflecting that investors are exposed to only half of the potential losses on the tranche and, therefore, should be compensated less. This flexibility should attract a larger investor base, given that more risk-averse investors can choose a higher level of protection.

Chart B

Investors can choose a protection level commensurate with their risk/return profile…

Illustration of the protection share that investors can choose as a percentage of the amount invested in an equity tranche

- guaranteed share
- non-guaranteed share
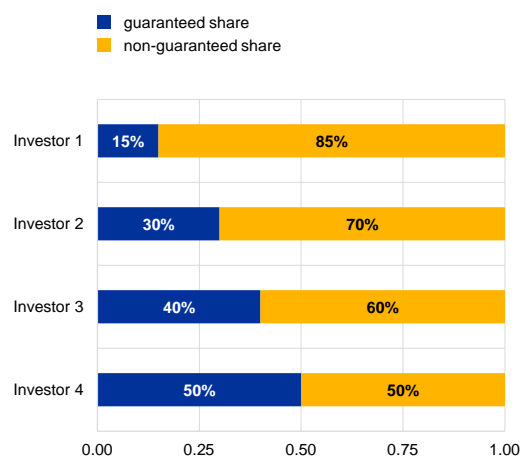
Source: ECB calculations.
Note: The chart illustrates the individual JGS share that can be chosen by four different investors in the equity tranche.

Chart C

…which in turn determines the maximum return available to them

Expected return to investors (y-axis) as a function of the share of equity tranche that is guaranteed (x-axis)

- investor yield
- investor 1
- investor 2
- investor 3
- investor 4
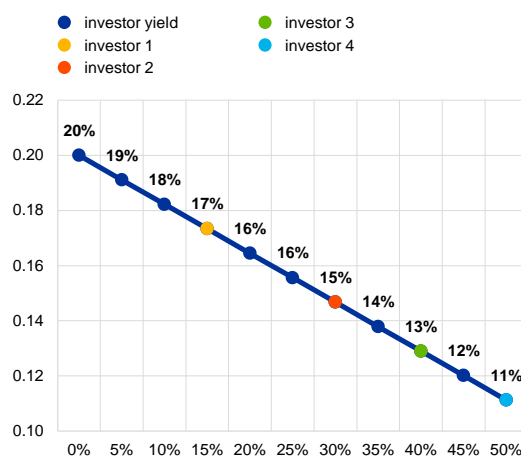
Source: ECB calculations.
Notes: Example assumes an expected return on equity of 20%, five-year funding costs of 0.5% and a five-year CDS premium on the state guarantor of 1.75%. Each investor is assumed to access the JGS for the proportion shown in Chart B.

If triggered, the payout of the JGS guarantee can be made once the underlying portfolio has been worked out, instead of at the maturity of the tranche. As such, the JGS guarantee enforcement structure incentivises fast servicer workout of the underlying portfolio, which also benefits senior tranche investors. The JGS does not require a specific waterfall, as a condition for activation.[171]

The JGS also provides a protection mechanism to the guarantee provider. The private investors' exposure to the credit risk of the tranche for at least 50% of the tranche amount, as well as the sale of the guarantee separately from the securitisation structure, ensure that pricing is market-based.

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[171] In the context of securitisation, the term "waterfall" denotes the sequencing of cash flows to the tranche holders, according to predetermined rules. A waterfall can be structured in a number of ways, with an impact on the credit risk and pricing of tranches. For example, a waterfall can require that the junior investors do not receive principal and interest until the more senior tranches are paid off, or allow junior investors to also receive interest, before the more senior tranches are amortised.

**An illustrated example shows how the introduction of the JGS could increase the price paid to the NPL seller, relative to some currently available solutions.** The example in **Chart C.4** highlights the potential positive effects accruing from an increased alignment of interests between the state and investors. As discussed in the previous section, adequate judiciary and administrative measures, as well as their efficient implementation, can have a very significant impact on the main factors that determine NPL prices. **Chart C.4** shows that even with very conservative assumptions – a marginally higher recovery rate and a slightly lower yield on the equity tranche required by investors – the benefits arising from the use of the JGS in terms of a lower yield required by junior investors and higher recovery rates can significantly increase the NPL price paid to sellers in a baseline scenario. Assuming somewhat higher benefits in terms of the recovery rate and also incorporating the effect of slightly faster cash-flow recoveries can result in significant additional NPL price increases.

Chart C.4

Securitisation and related innovative support measures can result in higher NPL prices than direct sales

Incremental NPL sale price achieved by using securitisation, and the JGS, over the price achievable via direct sale

(NPL sale price, as a percentage of gross book value)
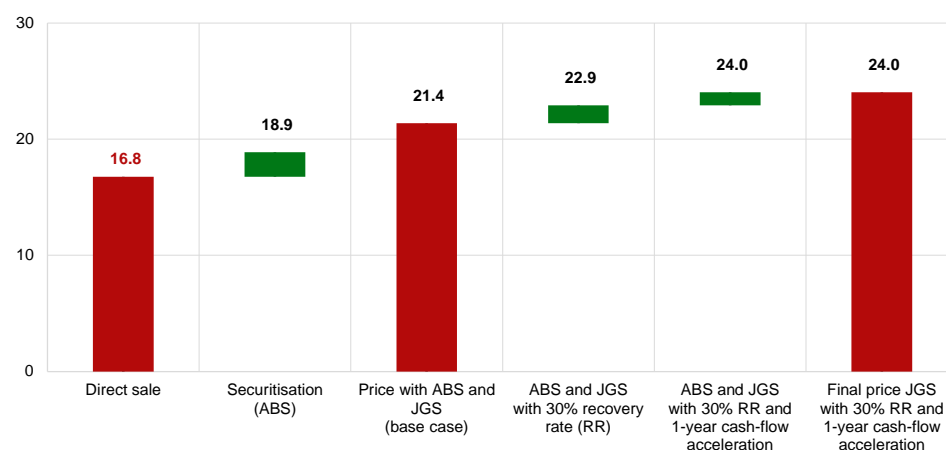
Source: ECB calculations.
Notes: The examples assume a NPL portfolio with a gross book value of 100 and a recovery rate of 25%, with cash flows distributed equally over five years. The yield (IRR) required by investors is assumed to be 15% in the case of direct sale, and 20% for the junior tranche and 5% for the senior tranche in the case of securitisation (asset-backed securities or ABS). Securitisation assumes two tranches, with the senior tranche accounting for 90% of the NPL sale price to the special-purpose vehicle and the junior tranche for 10%. The JGS (base case) scenario assumes an increase in the recovery rate from 25% to 28% and a decrease in the yield of the junior tranche from 20% to 17%. The last two scenarios assume that the use of the JGS results in slightly higher recovery rates (30% versus 28%) and both higher (30%) and faster (four years instead of five) recovery rates and cash flows, respectively.

The JGS can be employed successfully from an originator perspective as well.

Given currently depressed market prices, originators may have an interest in retaining part of the first loss tranche as this preserves upside potential in the case of higher-than-priced-in future recoveries; such an option could be particularly useful given current NPL market clearing prices, where NPLs are sold in some cases at prices significantly below their long-term economic value. At the same time, to be effective for the originator, the securitisation needs to achieve, as a minimum,

significant risk transfer (SRT) and accounting derecognition.[172] In this context, the JGS can represent an attractive option that enables originators to better achieve a balance between reducing exposure to their NPL portfolio and preserving some of the recovery upside.

Other tools harnessing the concepts underlying the JGS could also be envisaged. The state, for example, could co-invest directly with the private sector in the junior or mezzanine tranche(s) of a securitisation. The difference between direct co-investment in a junior tranche and the JGS is that, under direct co-investment, the state would have to provide funding for the junior tranche. Nevertheless, the securitisation structure in general and the NPL securitisation in particular can be used as a particularly efficient catalyst for NPL state-support measures.[173]

The second option, the forward purchase scheme (FPS), is designed to support direct NPL portfolio sales. It is designed to directly bridge the wide gap between bid and ask prices. The FPS differs from the JGS instrument in that, while also providing a strong signalling component with regard to the state's intentions to carry through a reform agenda, it extends low-cost financing to potential investors. It is premised on harnessing the time value of money and the idea that the state can provide financing at rates below a typical high-IRR investor's cost of capital, thereby providing investors with relatively low-cost debt financing. This vendor financing approach – similar schemes to which already exist in the market, even in the context of some NPL sales – leads to the buyer paying a higher price to the seller, if the partial payment of the purchase price can be delayed to a later stage. This results, first, from the buyer partially paying for the portfolio from the proceeds of the sale of that portfolio and, second, from the fact that the required cost of the funding provided by the state is considerably lower than the IRR required by the investor. Under the FPS, the state finances part of the purchase price to be paid by the investor to the seller. This corresponds to the difference (i.e. the forward premium) between a future price that the buyer is willing to pay at the maturity of the scheme (for example, in five to seven years) and the bid price the buyer is willing to pay at the transaction date. As in the case of the JGS, the price of state financing is market-based, and dependent on the market cost of providing funding to the NPL buyer and its guarantor. To the state, the advantages of the FPS are numerous. The scheme may help bridge bid-ask spreads in certain situations, given that the more advantageous financing conditions may directly result in a higher NPL price paid to sellers, including by also increasing the range of interested investors. Other advantages include: limited funding requirements; a limited risk of non-repayment due to the

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[172]   In the context of securitisation, SRT is the process through which banks are allowed to derecognise the regulatory capital charges for the securitised assets from their balance sheets. A bank would still have to recognise regulatory capital charges for any residual exposure to the securitisation, in the form of tranches, swaps or other exposures. According to the Capital Requirements Regulation, the SRT test has both quantitative and qualitative requirements. ECB Banking Supervision is responsible for assessing if SRT quantitative and qualitative requirements are met, as far as significant institutions are concerned.

[173]   Indeed, such an intervention could catalyse NPL securitisations for a significant multiple of the invested amounts. For example, in the Popolare Bari NPLs 2016 securitisation, the notional amount of the junior tranche amounted to just 2.1% of the gross book value. As such, in similar cases, assuming that the state intervention would enable securitisation transactions that otherwise would not be possible, the purchase of half of the junior tranche would enable the securitisation of 100 times more in gross book value, and an even higher multiple if less than half of the junior tranche were to be purchased.

presence of a highly rated guarantor;[174] and the fact that the scheme is based on market pricing. To the private investor, numerous advantages also accrue: funding is received at a fixed rate; full ownership and control over the acquired portfolio is maintained; there is partial postponement of financing costs to a later date; and, importantly, the ability to close the NPL transaction in the first place.

Box B
NPL forward purchase scheme

The forward purchase scheme (FPS) is effectively a loan provided by the state to NPL buyers, to finance part of the NPL purchase price. In particular, the state provides financing at levels that are attractive for investors with high funding costs, therefore allowing them to increase the price they pay to sellers of NPL portfolios. The financing is provided only for the portion required to bridge the gap between the bid price and the market clearing price levels, which under the FPS scheme is referred to as a forward price premium.

Under the scheme, illustrated in **Chart A**, a private investor purchases a portfolio at time zero, at a forward price agreed at that time. The investor pays the forward price in full, but only after a predetermined period corresponding to the duration of the scheme (for example, five to seven years). At inception, the investor pays the part of the forward price corresponding to a market bid price for the portfolio. The difference between the forward purchase price and the bid price – the forward premium – is paid at inception by the state.

Chart A
NPL forward purchase scheme – illustrative diagram
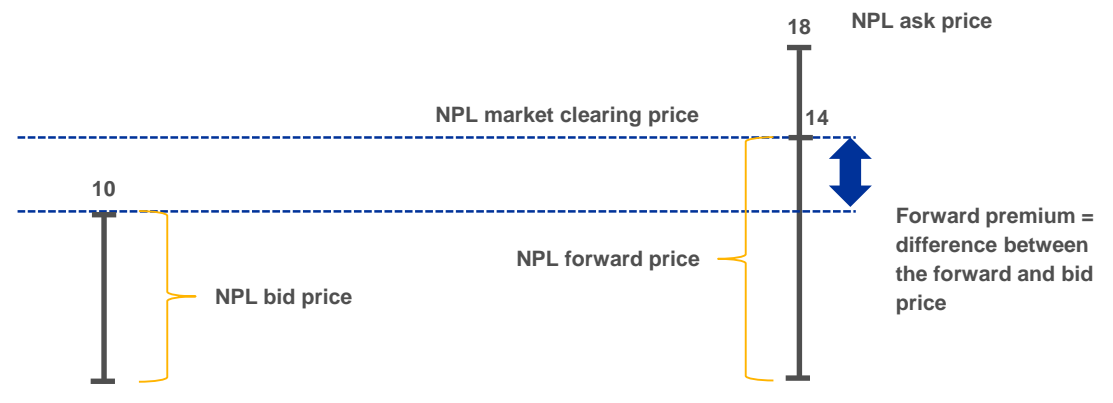
The private investor undertakes an obligation to repay the state's financing at the maturity of the scheme. In addition to undertaking its own payment obligation, it provides a payment guarantee from a highly rated, investment-grade guarantor. The state provides financing of the forward premium at a cost proportional to the senior unsecured borrowing costs of the guarantor, for a period equal to the maturity of the transaction. **Table A** presents the main structural features of the NPL forward purchase scheme.

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174 The FPS instrument also works to align incentives among the state, an investor and the guarantor and to ultimately ensure that the asset pricing, and therefore the agreed sales price, is fundamentally correct. Overpriced assets may result in losses to the investor, and potentially for the guarantor.

Table A

NPL forward purchase scheme – illustrative features

Features	Description
Scheme maturity	5-7 years
NPL bid price determination	Determined by the investor; must be market level and represent a realistic bid price, to ensure that the scheme only finances the bid-ask spread
NPL forward price determination	Determined by the investor and the seller; represents the market clearing price
State share in the NPL co-investment scheme	The state is a passive debt financing provider at a fixed cost determined upfront
Cost of state financing	Determined at a market price level. The interest charged by the state entity for the financing of the forward premium is equal to the senior unsecured cost of funding of the guarantor, as determined at scheme inception based on observable market prices, for a tenor equal to the scheme maturity. At the maturity of the scheme, the state entity receives the amount of the forward premium plus interest
Co-investment scheme management	Co-investment scheme managed by the private investor. The private investor owns and manages the NPL portfolio
Perfection of the sale of the NPL portfolio	The sale to the private investor takes place at time zero
Forward price payment	The NPL seller receives at time zero the full NPL forward purchase price. The private investor pays the bid price component and the government entity pays the forward premium component
Eligible guarantors for the forward premium	The repayment to the state of the forward premium at the maturity of the scheme must be secured by the payment obligation of the private investor (which cannot be a special-purpose entity set up for the purpose of this transaction or similar transactions) as well as by a guarantee issued by a highly rated investment-grade entity, which must be a supervised institution with no links to the investor

Chart B and **Table B** illustrate the potential benefits of the FPS. Consider first the case of an investor with a minimum IRR requirement of 15% that bids on a portfolio of NPLs that generate cash flows of 18 over 5 years. In scenario A, no transaction takes place, even though the minimum IRR is achieved, as the bid price (10) remains below the ask price (18) and market clearing price (14). In scenario B, even though the IRR floor is achieved, the bid price (12) remains too low for the transaction to be completed. Scenario C illustrates a potentially market clearing scenario, but here the investor cannot realise its minimum IRR, so once again no transaction takes place.

Consider now the same transaction but with support from the FPS. In scenario D, the state finances the bid-ask spread of 4; at time zero, the investor pays 10 and a further 4 in year 5. To the extent that the investor achieves its IRR of 15%, it is indifferent between paying another 2 at time zero, or 4 in 5 years.[175] The state pays 4 at time zero and recovers 4 from the investor after 5 years. Given that the investor can still achieve its target IRR, the NPL sale takes place, at the market clearing price of 14. In scenarios E and F, the co-investment structure results in additional benefits stemming from structural reform, in terms of faster recoveries (scenario E) and both faster recoveries and higher recovery rates (scenario F).[176]

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[175] Note that, to the extent that the investor realises its expected cash flows and IRR, it is indifferent between paying a discounted price today and an undiscounted price at a later time. In such a case, the investor would benefit from its expected return on the portion corresponding to the bid price paid at inception, as the realised return on the deferred portion is paid to the buyer, via the forward premium. The payment of the forward premium lowers the investor's return only in those cases where the realised return is lower than expected. This is because in such a case, the investor commits to pay a future cash flow corresponding to a higher compound rate than the realised return. This incentivises investors to ensure that the sizing of the forward premium is correct and not overstated.

[176] In scenario E, the benefits of state intervention are fully internalised by the investor, who realises a higher IRR compared with scenario D. In scenario F, the benefit of the state intervention in terms of a higher recovery value is shared between the investor, who realises a higher IRR, and the seller, who obtains a higher NPL price.

Table B

NPL forward purchase scheme – illustrative case study

| Scenarios		Time/Year						Total cash flow	Investor		NPL price components
		0	1	2	3	4	5		NPL price	Investor IRR	
A. Base case: stable NPL recovery value	NPL cash flow		5	0	5	5	3	18			Bid price
	Investor outlay	-10	0	0	0	0	0	-10	10	23.0%	
B. Base case: stable NPL recovery value	NPL cash flow		5	0	5	5	3	18			Investor breakeven price
	Investor outlay	-12	0	0	0	0	0	-12	12	15.0%	
C. Stable NPL recovery value	NPL cash flow		5	0	5	5	3	18			NPL clearing price
	Investor outlay	-14	0	0	0	0	0	-14	14	8.8%	
D. Stable NPL recovery value, state intervention	NPL cash flow		5	0	5	5	3	18			Bid price + deferred purchase price
	Investor outlay	-10	0	0	0	0	-4	-14	14	15.0%	
E. Stable NPL recovery value, state intervention, medium accelerated recovery	NPL cash flow		5	3	6	4	0	18			Bid price + deferred purchase price + additional benefit
	Investor outlay	-10.5	0	0	0	0	-4	-14.5	14.5	17.1%	
F. Higher NPL recovery value, state intervention, medium accelerated recovery, higher recovery rates	NPL cash flow		5	3	6	4	2	20			Bid price + deferred purchase price + additional benefit
	Investor outlay	-11.5	0	0	0	0	-4	-15.5	15.5	16.7%	

Source: ECB calculations.
Notes: Case study assumes that the recovery of cash flows occurs over five years and that cash flows are distributed as in the row "NPL cash flow". The "Investor outlay" row captures the amount of the investor's initial outlay and any subsequent outlay at the maturity of the scheme. The investor IRR is computed considering the investor outlays and the NPL cash flows received. NPL prices paid by the investor that are equal to or higher than the NPL market clearing price, and investor IRRs that are equal to or higher than the minimum investor IRR requirements, are highlighted in light green; otherwise in red. For simplicity reasons, cash flows do not incorporate the cost of funding for the financing of the forward premium.

Overall, the FPS allows NPL sales that may not have otherwise occurred to be completed, by providing two primary benefits that support the closing of the bid-ask gap. First, the state finances the forward premium, thus providing market-priced yet attractive inter-temporal bridge financing until a later date, where the NPL portfolio has been worked out. The value of this financing is higher, the longer the scheme maturity and the higher the IRR required by the investor.

Chart B

NPL forward purchase scheme – illustrative effects
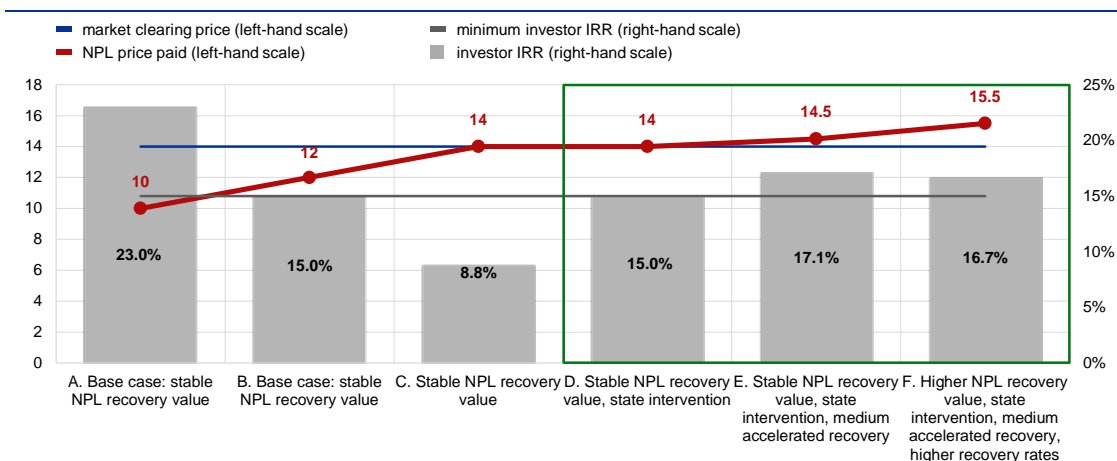
Source: ECB calculations.
Note: The chart illustrates the investor IRR given the NPL price paid by the investor, for each of the scenarios in Table B.

Second, while the provision of financing is in the form of debt, the presence of the state as co-investor in the scheme may benefit the private investor, given that the state, even while additionally protected by a guarantee, has an incentive not to incur losses on the transaction. To the extent that the buyer transfers part of these additional benefits to the seller, via a higher upfront NPL price, the seller also benefits.

The risks to the state as finance provider are mitigated by the fact that the obligation to repay the forward price premium is undertaken jointly by the NPL buyer and a highly rated investment-grade institution unrelated to the NPL buyer.

The potential asset classes for which these instruments may be applicable and the extent to which these options may complement other initiatives as part of a comprehensive solution warrant attention. These instruments' benefits stem from addressing the current market failure by better aligning state and private investors' incentives, ultimately ensuring that the time to recovery and rates of recovery are improved. Considering the different nature of the JGS and FPS options, a differentiated impact in terms of applicability can be identified. The JGS, as a pure co-investment scheme, where the state commits itself to the same risks as private investors, is best suited to align state and private investor interests, and provides a strong signalling effect. As such, the JGS effects are likely to be the largest where public policy has the potential to make the greatest impact. This would be the case in particular for loans to small and medium-sized enterprises, loans to other corporates and even exposures to commercial real estate, given the potential positive impact of policies to address time to enforcement, access to collateral and recovery values. However, retail exposures may be unsuited, particularly when unsecured, and owner-occupied residential real estate is also likely to be unsuitable, from a social policy perspective.[177] On the other hand, under the FPS option, while still providing a signalling effect, due to the protected invested amount and fixed-cost structure, the state has less exposure than under the JGS to the performance of the underlying NPLs. The value of the FPS scheme in addressing the current market failures is to support NPL direct sales in the current environment dominated by high-IRR investors, while at the same time being non-discriminatory regarding the type of assets that could be eligible.[178] As such, the FPS is complementary to the JGS. **Chart C.5** illustrates the potential complementary role for these two instruments in the spectrum of NPL resolution options. From a comparability perspective, the JGS option offers some of the features of an asset protection scheme in that the state
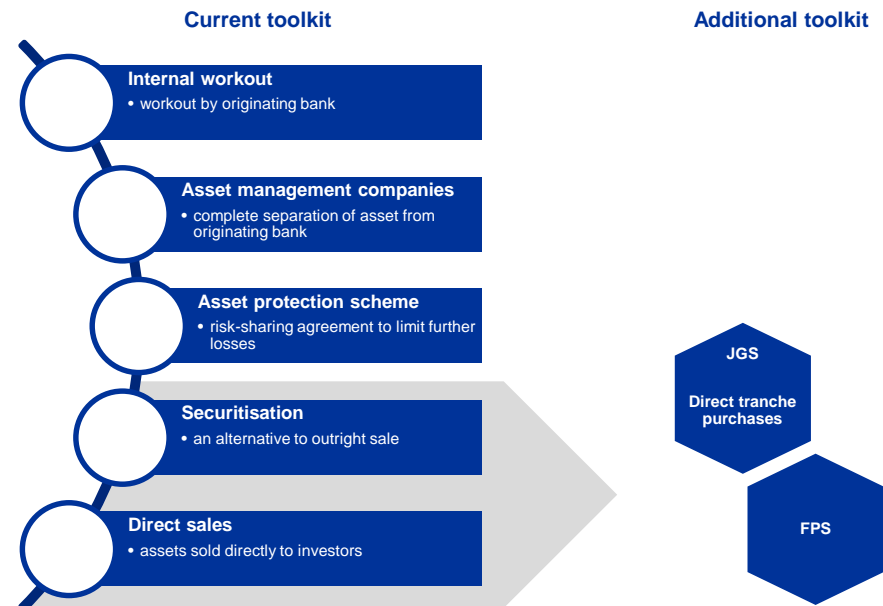
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[177] Mortgages related to residential investment properties, also known as buy-to-let, where present in the market, may be applicable in such schemes, as the social policy dimension is much reduced, and investors could be attracted to a stock of housing with performing rental income. Targeted reforms may be required, however, to distinguish the treatment of such assets from primary residences.

[178] In establishing such instruments, however, states may want to take into consideration some eligibility criteria. For example, it may be particularly beneficial to introduce an FPS-like instrument for use with low-priced, unsecured retail assets, for which a liquid market already exists.

offers some downside risk protection, while the FPS is directly comparable to the direct sale option.[179]

Chart C.5

Comparative overview of the current and additional toolkits employed by the public and private sectors to address NPLs

Current toolkit	Additional toolkit

Internal workout
• workout by originating bank

Asset management companies
• complete separation of asset from originating bank

Asset protection scheme
• risk-sharing agreement to limit further losses

Securitisation
• an alternative to outright sale

Direct sales
• assets sold directly to investors

JGS

Direct tranche purchases

FPS

Source: ECB.

Concluding remarks

The positive trend in the NPL market, where some euro area countries have shown encouraging NPL sale growth over the past year, could be further supported via jurisdiction-level, well-designed and targeted public interventions. Both demand and, in particular, supply-side developments in terms of supportive legislative changes and schemes, as well as enhanced supervisory guidance, are likely to contribute to continued sustained NPL disposals in 2017. Following through with effective implementation of recently passed legislation will be the key driver and will enable both higher valuations and more sales. Nevertheless, the very high NPL stocks on bank balance sheets in certain jurisdictions require further targeted public intervention measures.

New tools could be added to the NPL toolkit, such as guarantees on junior tranches of NPL securitisations, including direct tranche purchases, and

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[179] Typically, asset protection schemes have been applied in cases where asset values may fall to a large extent but with low probability, following an insurance-type principle, and with the rationale that the scheme can avert fire sales whilst markets are dysfunctional, and thereby avoid negative, self-reinforcing spirals. The JGS offers similar downside protection, however with the rationale that a virtuous, positive spiral can be set in train, by enacting and committing to necessary structural reforms, and signalling that intent very clearly through co-investment.

forward purchase schemes. By better aligning public and private sector interests, such new tools should both increase current investors' interest in NPLs and make the asset class more attractive to a wider investor base. While these tools require the state to undertake more risk than in the current toolkit, such risk would be limited compared with the potential benefits. Importantly, in the current environment of depressed NPL prices and high expected returns required by investors, the risk/reward ratio for these tools appears particularly favourable. Crucially, the state has the ability to undertake actions that minimise its own investment risks. An effective implementation of such tools would reinforce the market's confidence that governments are willing to take decisive measures to tackle the NPL problem in a timely manner; in turn, this would create a virtuous circle, where increased market confidence would attract more investors, raise NPL valuations and foster more sales.